

## *Dichonia jahannamah*, a new species from Iran in the subgenus *Gripusia* TAMS, 1939 (Lepidoptera, Noctuidae, Xyleninae)

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**Abstract:** *Dichonia* (*Gripusia*) *jahannamah* sp. n. is described from northeastern Iran. The new species is the eastern sibling species to both *D. aprilina* (LINNAEUS, 1758) and *D. wegneri* (KOBES & FIBIGER, 2003), **comb. n.**, whereas the fourth member of this subgenus, which is exclusively distributed in the western Palaearctic, *D. pinkeri* (KOBES, 1973), seems to be more distantly related compared with the other three. The holotype male (in coll. Kärntner Landesmuseum, Klagenfurt, Austria) and a female paratype are illustrated together with the male and female genitalia, and the habitat for *G. jahannamah* is described and presented in a photograph.

**Key words.** Lepidoptera, Noctuidae, *Dichonia*, new species, North East Iran, Elburs Mts.

***Dichonia jahannamah*, eine neue Art der Untergattung *Gripusia* TAMS, 1939 aus Iran (Lepidoptera, Noctuidae, Xyleninae)**

**Zusammenfassung:** Eine neue Spezies, *Dichonia* (*Gripusia*) *jahannamah* sp. n. wird aus Nordostiran beschrieben. Die neue Art ist die östliche Schwesternart zu *D. aprilina* (LINNAEUS, 1758) und *D. wegneri* (KOBES & FIBIGER, 2003), **comb. n.**, wobei die vierte der ausschließlich in der Westpaläarktis verbreiteten Untergattung, *D. pinkeri* (KOBES, 1973), etwas entfernter zu den drei anderen Mitgliedern des Subgenus zu stehen scheint. Das Holotypus-Männchen (im Kärntner Landesmuseum, Klagenfurt, Österreich) und ein Paratypus-Weibchen von *D. jahannamah*, zusammen mit den männlichen und weiblichen Genitalien, dazu das Habitat werden beschrieben und abgebildet.

### Introduction

After a first tour to Iran in May 2001 (see WIESER et al. 2002, STANGELMAIER et al. 2003), the two junior authors, C.W. & G.S., visited Iran for a second time in 2003 and on this trip also collected in the more eastern areas of North Iran. In one locality on the second trip they especially discovered several specimens of a species somewhat similar both to the beautiful autumn species *Dichonia aprilina* (LINNAEUS, 1758) (WIESER et al. 2005: fig. 25), which is widespread in Europe, and to *Dichonia pinkeri* (KOBES, 1973), which was hitherto only known from a very restricted area of the eastern Balkan Peninsula: from Bulgaria, northeastern Greece and western Turkey. They knew that *D. aprilina* has a rather rare form (f. *obscurior* WOLFSBERGER, 1970) which somewhat resembles the specimens found in 2003 and here described as *D. jahannamah*. They preserved several specimens for further investigation when they came home.

At the same time Lutz W. R. KOBES and M. FIBIGER published a paper on a new *Gripusia* (actually *Dichonia*

— see below) species *D. wegneri* (KOBES & FIBIGER, 2003), **comb. n.**, from northeastern Greece, which occurs sympatrically with both *D. aprilina* and *D. pinkeri*. Consistent differences in both the ♂ and the ♀ genitalia were found sufficient for a description of a new species. A few months later, in January 2004, several Noctuidae specialists had their third Noctuidae workshop in Budapest where the second author, G.S., brought part of the set Iranian Noctuidae material for presentation and determination. Among the very interesting specimens were a few specimens of the *Dichonia* (*Gripusia*) species, but without a thorough examination none of the attendants dared to give a name for the species. In May 2005, during the second ALI (Association Lepidoptera Iranica) meeting in Teheran, Iran, the senior author, M.F., discovered several specimens in the insect collection of the Insect Taxonomy Research Department of the Plant Pest & Diseases Research Institute which clearly belonged to the same species as those he had seen during the Noctuidae meeting in Budapest. Afterwards the four authors decided to look further into the matter, and after genitalia preparations and in spite of its allopatrical occurrence, we decided that the Iranian specimens belong to an undescribed species, described here.

### Abbreviations

CBP	coll. B. PLÖSSL, Innsbruck, Austria.
CGS	coll. G. STANGELMAIER, Villach, Austria.
CMF	coll. M. FIBIGER, Sorø, Denmark.
GP	genitalia preparation.
LMK	coll. Kärntner Landesmuseum, Klagenfurt, Austria.
HMIM	coll. Hayk Mirzayans Insect Museum, Tehran, Iran.

### *Dichonia jahannamah* sp. n.

**Holotype** ♂ (Fig. 1): North East Iran, Elburs Mts., Prov. Golestan, Natural Reserve Jahan Namah, Jahan Namah, 1800 m, 20.–21. x. 2003, leg. C. WIESER, LMK.

**Paratypes** (in total 23 ♂♂, 20 ♀♀): NE Iran, [Prov. Golestan, Elburs Mts.], Natural Reserve Jahan Namah: 3 ♂♂, 2 ♀♀, Jahan Namah, 1800 m, 20.–21. x. 2003, leg. C. WIESER, LMK; 2 ♂♂, 2 ♀♀ (Fig. 2), same data, leg. G. STANGELMAIER, CGS; 2 ♂♂, Val Maghazy, 1650 m, 21. x. 2003, leg. G. STANGELMAIER, CGS; 1 ♂, 1 ♀, Deraz Nu, 2420 m, 22. x. 2003, leg. G. STANGELMAIER, CMF, ♂ GP 5421 FIBIGER, ♀ GP 5422 FIBIGER; 4 ♂♂, 2 ♀♀, Deraz Nu, 2420 m, 22. x. 2003, leg. G. STANGELMAIER, CGS; 3 ♂♂, 4 ♀♀, Deraz Nu, 2500 m, 22.–23. x. 2003, leg. C. WIESER, LMK; 4 ♂♂, 1 ♀, Station Deraz Nu, 2450 m, 22. x. 2003, leg. B. PLÖSSL, CBP; 2 ♂♂, 1 ♀, Tange Gol, 730 m, 25. x. 2003, leg. B. PLÖSSL, CBP; 1 ♀, Tange Gol, 750 m, 30. x. 2003, leg. G. STANGELMAIER, CGS;

2 ♀♀, 752 m, 25.–26. x. 2003, leg. C. WIESER, LMK; 1 ♀, Park Melli Golestan Tange Gol, 620 m, 7. x. 1994, leg. MIRZ., BADI, EBRA., CMF, GP 5507 FIBIGER; 1 ♂, 2 ♀♀, Tang-e-Gol, 600 m, 27.–30. x. 1979, leg. PAZUKI & BADI, HMIM; 1 ♀, Tang-e-Gol, 29.–30. x. 1998, leg. MANZARI, MOGHADDAM, NAZARI, N., HMIM. — NE Iran, Prov. Khorasan, Elburs Mts., National Park Golestan: 1 ♂, Almeh, 1650 m, 17.–26. x. 1989, leg. PAZUKI & BADI, HMIM.

**Etymology.** The new species is named after its type locality, Jahan Namah, which translated into English is “View of the World”. Jahan Namah is a Natural Reserve in the southern vicinity of the town Gorgan.

## Description and differential diagnosis

Length of forewing: ♂♂ average 19,8 mm ± 4,55 standard deviation,  $n = 18$ ; ♀♀ 18,81 mm ± 6,71,  $n = 16$ ; wingspan: ♂♂ 47–52 mm, ♀♀ 52–55 mm; on average slightly larger than *D. aprilina*, *D. wegneri*, and *D. pinkeri*. Labial palps of the first two segments heavily vertically tufted, the third segment is setose, cylindric, 0,75 times the length of the second segment. Antennae of ♂ ciliate, those of ♀ filiform. Head, thorax, and ground colour of forewing greenish brown, suffused with black scales. The forewing pattern of all(!) specimens very much resembles that of *D. pinkeri*, not that of *D. wegneri* and *D. aprilina*, except that *D. aprilina* has a rare form, mainly occurring in southern Europe (f. *obscurior*), which shows a similar wing pattern to *D. jahannamah*. One feature clearly separates *D. jahannamah* from *D. aprilina*: the conspicuously narrower wings. Otherwise the infraspecific variation of the wing pattern of all four species shows such a diversity that it is impossible to make a reliable description. The same is the case of the hindwing and the underside.

The most prominent differences are as usual in the genitalia, so with reference to RONKAY et al. (2003) and KOBES & FIBIGER (2003) the differences are:

- *D. jahannamah* has a broader tip of the digitus, especially compared to *D. aprilina*, but it is less prominent compared to that of *D. pinkeri*;
- *D. jahannamah* has a longer ampulla than both *D. aprilina* and *D. wegneri*, but shorter than that of *D. pinkeri*;
- *D. jahannamah* has a broader juxta than *D. aprilina* and *D. wegneri*, but equally broad as that of *D. pinkeri*, though shorter;
- *D. jahannamah* has a narrower and equally broad vesica, which does not exceed the width of the phallus (see KRISTENSEN 2003); those of both *D. aprilina* and *D. wegneri* are broader and irregular in shape, the phallus and vesica of *D. pinkeri* is extremely narrow; and the length of the sclerotised plate of ductus bursae is slightly shorter than that of *D. aprilina* and much shorter than that of *D. wegneri*, that of *D. pinkeri* is very different: short and trapezoid.

## Systematics

The genus-groups around *Dichonia* HÜBNER, [1816] are characterised and treated by RONKAY et al. (2001), where

also *D. aprilina* and *D. pinkeri* and their ♂ and ♀ genitalia are illustrated. The species *D. aprilina* and *D. wegneri* and their ♂ and ♀ genitalia are illustrated by KOBES & FIBIGER (2003). *Dichonia* has two subgenera, *Dichonia* s. str. with two species: the type species *aeruginea* (HÜBNER, [1808]) and *convergens* ([DENIS & SCHIFFERMÜLLER], 1775); and the subgenus *Gripesia*, which comprises four species. They are members of the subfamily Xyleninae (sensu FIBIGER & LAFONTAINE 2005), tribe Xylenini, subtribe Xylenina. The Xyleninae subfamily is possibly paraphyletic, defined mainly by plesiomorphic character states, nine of which are listed by FIBIGER & LAFONTAINE (2005: 42). However, almost all of the tribes attributed to Xyleninae are stated to be monophyletic (FIBIGER & LAFONTAINE 2005: 42). In the tribe Xylenini, some characters which define the tribe are behavioural: the species have fall flight and have woody host plants. The subtribe Xylenina is better characterised: almost all species are autumn fliers, and most of them overwinter as imagines; their eyelashes are long, especially in the overwintering species; the digitus is extremely long and inside fused to the costal margin of the valve, the tip is most often free, often exceeding the tip of the valve; the ampulla is twisted, long, and extends well beyond the dorsal margin of the valve; in the larvae the spinneret is narrow and tubular, and is usually similar in length to the labial palps; and the apical seta of the latter is usually longer than the basal segment.

KOBES & FIBIGER (2003) reluctantly upgraded *Gripesia* to generic level. However, because of the character states listed below, and following RONKAY et al. (2001), we have to reinstate *Gripesia* at a subgeneric level to *Dichonia*.

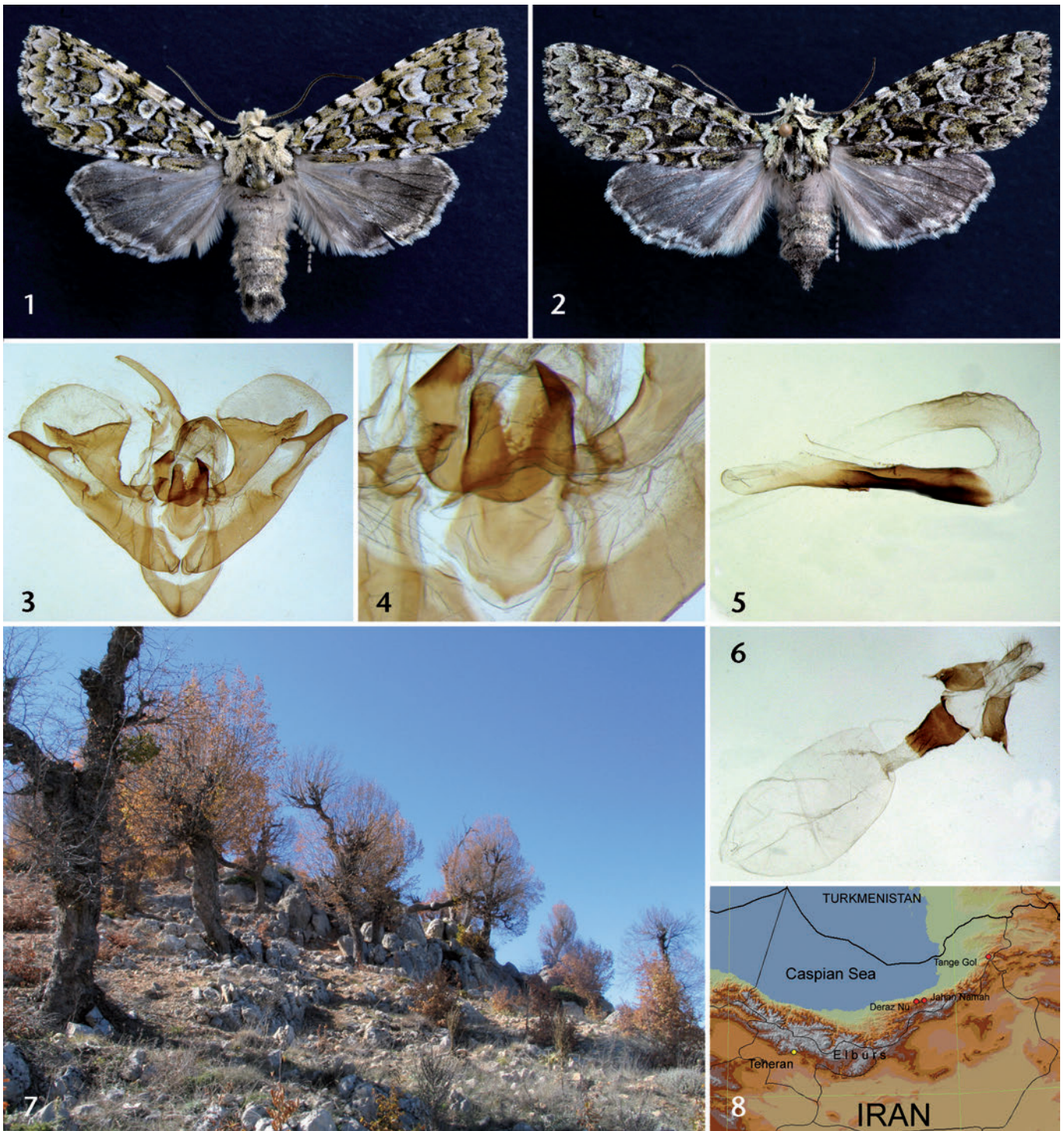
The six members of the genus *Dichonia* share the following autapomorphic character states:

- the heavily specialised foreleg, the femur much weaker than the tibia, a unique situation unknown to occur in other noctuids;
- foretibia enormously thick, slightly ovoid, enlarged, the most sclerotised part of the entire imago;
- a regular epiphysis is absent, but transformed to a heavily sclerotised rounded crest ventrally;
- the articulation between tibia and the first tarsal segment is displaced so the tarsus lies outwards, parallel with the tibia;
- the first tarsomere/tarsal segment has an epiphysis-like short, broad, triangular spur, which inwardly bears short, stout setae, probably with a function like the normal epiphysis acanthae, which is used to clean the antennae.

The behavioral habit of this specialised foreleg and its total function has never been studied or described.

In the ♂ genitalia armature the valve is broadest at  $2/3$  of its length distally; sacculus short, broad in subgenus *Dichonia*, long and narrow in *Gripesia*; clasper in a ventral position, parallel with the ventral margin; ampulla large, either finger-like with a broad base or plate-like; vesica of subgenus *Dichonia* with diverticula, armed similar





**Fig. 1:** Holotype ♂ of *Dichonia (Gripusia) jahannamah* sp. n. (photograph ALLESCH, LMK). **Fig. 2:** A ♀ paratype of *Dichonia (Gripusia) jahannamah* sp. n. (photograph ALLESCH, LMK). **Fig. 3:** ♂ genital armature of *Dichonia (Gripusia) jahannamah* sp. n. (genit. prep. 5421 M. FIBIGER). **Fig. 4:** Juxta of ♂ genitalia armature of *Dichonia (Gripusia) jahannamah* sp. n. (genit. prep. 5421 M. FIBIGER). **Fig. 5:** Phallus with everted vesica of *Dichonia (Gripusia) jahannamah* sp. n. (genit. prep. 5421 M. FIBIGER). **Fig. 6:** Female genitalia of *Dichonia (Gripusia) jahannamah* sp. n. (genit. prep. 5422 M. FIBIGER). **Fig. 7:** Habitat photo of the place where, e.g., *Dichonia (Gripusia) jahannamah* sp. n. was recorded, and where also *Conistra torrida*, *Eugnorisma spodia* and *Dasyptolia diva* occurred (photograph GUTLEB). **Fig. 8:** Distribution map for *Dichonia (Gripusia) jahannamah* sp. n.

to other Xylenine genera; ductus bursae of subgenus *Dichonia* with sclerites; corpus bursae with sclerotised patches and/or with signa bands.

The subgenus *Gripusia* is characterised by the beautiful emerald greenish ground colour of the forewing with well outlined, black, full noctuid wing pattern; in the ♂ genitalia, the basal half of the costa is heavily enlarged, into a heavily sclerotised triangular plate from which

projects the tip of the digitus; the juxta is prominently large, long, shield-shaped with a dorsal medial cleft; ampulla huge, club-like; phallus long and narrow; the vesica projects dorsally, unarmed except for a subapical cluster of spicules around the vesica; anterior apophyses very short; a ventral, heavily sclerotised, basal plate of ductus bursae present, the dorsal side is membranous throughout; and corpus bursae ovid, membranous without signum.

## Distribution and ecology

*Dichonia jannamaha* probably occurs in more localities than presently known in the North East Elburs mountains (Fig. 8). The type locality (Fig. 7) in Deraz Nu is characterised by either rather isolated oak trees with scattered low vegetation, or like in Tange Gol dominated by a more or less tight oak forest. All specimens were recorded at light. The early stages are unknown, but similar to the sister-species it is presumed that the larvae feed on oak. Other typical noctuids from the type locality were, among others, *Conistra torrida* (LEDERER, 1855), *Eugnorisma spodia* (PÜNGELER, 1900) and *Dasypolia diva* RONKAY & VARGA, 1990 (see WIESER et al. 2005).

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